

THE INNOVATION-FRIENDLY ENVIRONMENT IN EUROPE

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ABSTRACT

In this article we investigate the determinants of the innovation-friendly environment in Europe in the period 2000-2019. We use data from the European Innovation Scoreboard of the European Commission for 36 countries. Data are analyzed using dynamic panel data at 1 stage, panel data with fixed effects, panel data with random effects, pooled OLS, and WLS. Results shows that the “Innovation-Friendly Environment” is positively associated to “Basic-school entrepreneurial education and training”, “Government procurement of advanced technology products”, “Employment share Manufacturing”, “Finance and support”, “Human resources”.

Keywords: Innovation-Friendly, Economic Growth, Europe

JEL Code: C33, O3, O30, O31, O43

INTRODUCTION

In this article we analyze the determinants of the innovation-friendly environment in Europe in the period 2000-2019. We use data from the European Innovation Scoreboard. The main idea of the article is that innovation is that there are socio-cultural, political, and institutional factors that can shape the degree of innovation at a country level. Innovation is an essential tool for economic growth. The role of innovation has been explicitly recognized in Schumpeterian economics (Schumpeter, 2013) and in the endogenous growth theory (Romer, 1994). Even Robert Solow’s theory of economic growth recognizes the role of technological change, innovation and Research and Development in increasing the efficiency of human capital (Solow, 1956).

But the innovation-friendly environment is not only determined by economic and financial variables. Also cultural and socio-psychological factors have a role in creating the condition for an innovation-friendly environment. In this sense we refer to the theory of the Dutch sociologist and anthropologist Geert Hofstede that has developed a model based on six variables to evaluate the impact of cultural factor on economic and corporation performance at a country level. We report a literature review that is centered on the ability to use Hofstede’s index to evaluate the ability of economic organizations and national productive systems to promote innovation.

Finally, we run an econometric analysis to evaluate the determinants of the innovation-friendly environment in Europe. Results show that the innovation-friendly environment is positively associated to “Basic-school entrepreneurial education and training”, “Government procurement of advanced technology products”, “Employment share Manufacturing”, “Finance and support”, “Human resources”.

The second paragraph shows a literature review, the third paragraph presents the model and the econometric results, the fourth paragraph contains the conclusion, the fifth paragraph shows the bibliographical references, the sixth paragraph is an appendix with a collection of data and metric models.

LITERATURE REVIEW

The innovation-friendly culture in the theory of Hofstede. Tekin & Tekdogan (2015) afford the question of the social and cultural determinants of innovation as a tool for economic development. The authors specifically focus their attention of the relevance of culture in determining an innovation-friendly environment and in improving the ability to promote innovation capacity in a society. The authors use the Hofstede Index to evaluate the relationship between culture and innovation. The Hofstede Index as been realized by Geert (1928, 2020) that was a pioneer in social research. The Hofstede Index, in its second and more complete version, contains 6 dimensions that can be used to classify cultural behaviors that are:

- *Power distance index*: that is a measure of inequality of the distribution of power among a certain society;
- *Individualism vs collectivism*: the degree of integration of individual in groups at a societal level;
- *Uncertainty avoidance*: that is the tolerance for alternative thinking and non-conventional visions;
- *Masculinity vs femininity*: masculinity is the preference for heroism and a culture of achievement in a certain society, while femininity is based on a preference on cooperation, modesty and tolerance for weaknesses.
- *Long term orientation vs short term orientation*: that explain the relationship that a certain population has with its tradition in respect to the future;
- *Indulgence vs restraint*: the degree of freedom in pursuing individual desires.

The authors consider innovation as a crucial competence to achieve economic growth. And they question if the ability to orient an certain society towards a cultural environment that is innovation-friendly can be learned. And they answer to this question positively, considering that if creativity and the culture of innovation are skills than these skills can be learned and translated in the institutional and political framework of a certain country. The authors specifically found that there is a positive relationship between innovation friendly culture and:

- *Higher individualism*: countries in which individualism is more accepted as a social behavior show higher degree of innovation. The culture of individualism is positively associated to innovation and technological development. If politicians are interested in building a social behavior that is more oriented to innovation, they should promote individualism.
- *Willingness to take risks*: a more risk-oriented behavior is associated to countries with higher levels of innovation. Innovation requires to take risks due to the uncertainty of the outcomes that relate to the technological change. If politicians are interested in creating a society based on innovation than they should introduce incentives that help individuals to take more risks.
- *Readiness to accept change*: countries in which people is more able to sustain and participate in the technological, institutional, and societal change are more able to develop a culture that is innovation friendly.
- *Long term orientation*: societies and cultures that are oriented to long term period have more probabilities to produce a culture able to promote innovation. Since innovation requires investments, institutions, educations, enrichment of human

capital, it is necessary to take a long term to evaluate the efficacy of the political implications of innovation friendly environment.

- *Low power distance*: countries in which the population is less oriented to accept a non-egalitarian distribution of the power are also more able to develop a deeper innovation friendly culture.
- *Weak uncertainty avoidance*: Innovation-friendly cultures are more able to accept diversity of theories, point of views and ideas.
- *Openness to new information*: innovation friendly cultures are open to the acquisition of new information i.e., to accept the process of technological change and the scientific progress as an essential part of the development of the society.
- *Frequent travel*: countries in which the population travel frequently show a more innovation-friendly culture.
- *Positive attitude towards science*: countries that have a positive attitude toward science have also greater probabilities to develop an innovation-friendly culture.
- *Value of education to society*: countries that invest more in education and instruction have also greater probabilities to develop an innovation-friendly culture.
- *Religion*: countries that have a society more oriented to religious values have also greater opportunities to develop an innovation-friendly culture.

Tekin & Tekdogan (2015) show how culture can have an essential role in shaping the innovation-friendly environment using the Hofstede Index.

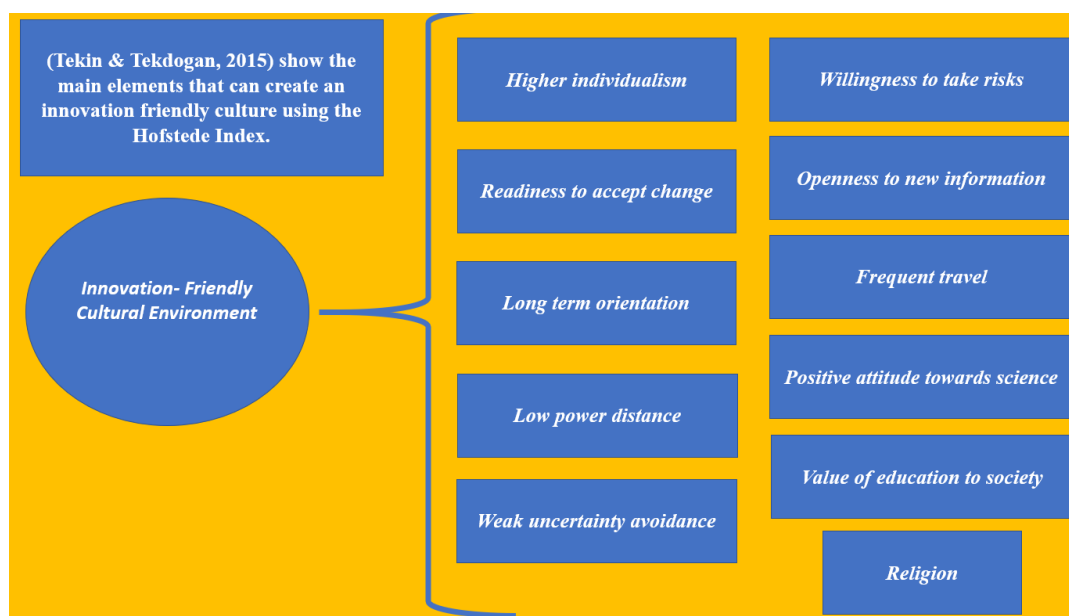


FIGURE 1
TEKIN & TEKDOGAN (2015) SHOW THE DETERMINANTS OF THE INNOVATION-FRIENDLY CULTURE USING THE HOFSTED E INDEX

Shane, Venkataraman & MacMillan (1995) analyze the relationship between national culture and national preferences for innovation with a sample of 1228 individuals in 30 countries. The authors find that:

- If a society is uncertainty avoiding then it recognizes a greater relevance to norms, rules, and procedure in promoting innovation. Uncertainty avoiding operates as an external intangible condition that reduces the ability of innovators to promote innovation, freely.
- If a country is characterized by power distance then there is an increasing probability that innovators try to have support from authorities rather than creating autonomously

the condition to promote innovation. Power distance inhibits the freedom of innovators through implicit norms and explicit hierarchies.

- If a society is oriented to collectivism, then there are greater probabilities to promote inter-functional innovation and to promote cooperation among innovators among different sectors.

There is a positive relationship between cultural values and preferences for innovation at a country level. The collectivist orientation of a society boosts cross-sectors innovation through cooperation among institutions and organizations. If a society accept uncertainty then innovators challenges norms, values, and rules. If a society sustains a non-egalitarian distribution of power, then innovators try to obtain support from authorities in the reduction of their individual freedom to innovate.

Rinne, Steel & Fairweather (2012) consider the positive relationship between the number of per capita of trademarks and the presence of individualism, uncertainty avoidance and power distance at a country level. The authors perform multi-linear regression to estimate the impact of Hofstede's measures of cultural environment and the innovation as it has been defined in the Global Innovation Index. The results show that:

- There is a negative relationship between the Global Innovation Index score and power distance i.e., the greater is the inequality of distribution of power in a certain society the lower is the degree of innovation;
- There is a positive relationship between individualism and the Global Innovation Index scores i.e., the greater is the orientation of a society toward individualism the greater is the ability of society to innovation.

If politicians are interested in promoting an innovation friendly environment in the sense of culture, then they should try to reduce the degree of power distance. In countries with high power distance workers are not autonomous and they need to be guided in the process of value creation in the reduction of the ability to innovate. At the contrary in countries with a low level of power distance there is an active participation of workers in the creation of innovation. Power distance is cultural determinants that can have a relevant impact on the reduction or empowerment of employees in the sense of innovation. If power distance is low then employees have greater incentives to communicates with hierarchies to promote new ideas, new products and services creating the condition for a more innovation friendly environment.

Similarly, if a society is more oriented to individualism than can promote a deeper orientation towards meritocracy, independence, autonomy, and freedom. The authors suggest that on one side, in collectivists society confrontation is avoided to preserve harmony, while on the other side individualistic societies are more oriented to confrontation and through this way it is possible to develop more ideas and, in the end, to produce innovation.

Kiurunen (2009) afford the question of the presence of different levels of innovation among different countries. Specifically, the author analyzes data from the European Innovation Scoreboard. Kiurunen (2009) considers the relationship between innovation and culture at a country level in European nations in the light of the Hofstede's theory. The author finds that nations with similar cultural characteristics have also similar results in term of innovation. Specifically, in the most innovative countries have low power distance, a higher degree of acceptance for uncertainty and an deeper recognition of the role woman in the society. On the contrary less innovative countries have higher degree of power distance, a deeper uncertainty avoidance and tends to be prefer a masculine culture over a feminine culture.

Shane (1995) analyze the relationship between uncertainty and innovation in a dataset of 4405 individuals for forty-three organizations in sixty-eight different countries. The author finds that countries that accept uncertainty show higher degree of innovation while countries that avoid innovation are oriented to a lower degree of innovation. The results show that uncertainty accepting societies can promote innovation. The author suggests that the positive

relationship between innovation and uncertainty avoiding society can be used to solve the question of the location of plants for multinational corporations. If a manager of a multinational corporation needs to find the best location in the sense of innovation, then the manager can choose based on the uncertainty-acceptance criterion on a national and regional level. In this sense uncertainty acceptance society are more able to create an innovation-friendly environment either for SMEs either for big corporations. Uncertainty acceptance society can also improve the degree of Foreign Direct Investment-FDI.

Rujirawanich, Addison & Smallman (2011) afford the question of the relationship between innovation and enterprise in small and medium enterprise-SMEs in Thailand based on Hofstede's theory. The authors find that in Thailand there are traditional cultural values different from Hofstede's variables that can have an impact on the level of innovation. But the participation in an international market can crate the conditions for a change in values among the people increasing the orientation of Thailand culture towards innovation. The authors find also that Thai SMEs are more able to apply incremental innovation rather than radical innovation. Thai SMEs shows inefficiencies in implementing high tech innovation at the frontier of the Research and Development. The low efficiency of Thai SMEs can be explained considering the absence of the Hofstede's variables except for the long run perspective. The contribution of Rujirawanich, Addison & Smallman (2011) is relevant for the fact that suggest considering the role of regional and local factors in shaping the innovation-friendly environment, especially for SMEs.

Jassawalla & Sashittal (2002) suggest to investigate the relationship between cultural environment and the product innovation process at a firm level. More innovative cultures in the sense of product development are based on teamworking and risk-taking. But authors suggest that the creation of best practices based on the theoretical and empirical relationship between cultural environment and product innovation is a challenge for economic organizations. Innovation requires a change in the culture of an organization. The passage between old procedures and narrations to new ideas and procedures is a challenge that many firms and organization can easily loose without the appropriate cultural background oriented to innovation and technological change. The authors suggest that to analyze the ability of a firm to accept innovation it is necessary to consider tacit beliefs, systems of values, stories, rituals, artifacts.

Westwood & Low (2003) analyzes the relationships among culture, creativity, and innovation. The authors consider the differences in the conceptualization of creativity among countries and the social determinants of creativity and innovation. Westwood & Low (2003) also afford the question of the relationship among different types of personalities, cognitive styles, creativity and innovation. The authors find the sequent results:

- Culture has an impact on creativity and innovation even if this relationship cannot be universalized;
- Data do not consent to make definitive statements on the presence of differences among countries in personalities with respect to creativity;
- Creativity and innovation cannot be explained only on the basis of cultural variables without considering other factors that have an impact in shaping the innovation-friendly environment;
- The relationship between culture and innovation does not operate directly but through non-linearity.

The creation of an innovation-friendly environment certainly can be created recognizing the role of cultural determinants, but these cultural determinants are only a part of the complex socio-economic and psychological factors that have a role in orienting countries towards innovation.

Kaasa & Vadi (2010) afford the question of the relationship between cultural variables in the sense of Hofstede's theory and innovation measured through the number of patent application in Europe. The authors use data from European Social Survey. Countries

that have the greater number of patents are characterized by the presence of low degree of power distance, uncertainty avoidance, family-related collectivism, and masculinity. The lower the degree of these variables the higher the patenting intensity. But the authors suggest that culture alone is not able to guarantee an high number of patents and that in this sense also institutional, economics and political frameworks have a role in orienting a societies towards innovation.

Khan & Cox (2017) consider the role of innovation and creative ideas for companies and countries. The increasing degree of competitiveness due to globalization has increased the necessity of economic organization to boost innovation to gain efficiency and improving market share. The process of innovation can be better understood considering the role of culture on a country level. Culture has a relevant impact in determining the level of creativity and innovation among countries. The authors in particular use the Global Innovation Index in connection with the Hofstede's theory to investigate the relationship between innovation and culture at a county level. The authors find that more innovative countries are characterized by the presence of a culture based on individualism, low masculinity, pragmatism and indulgence.

Rank, Pace & Frese (2004) considers the role of creativity and innovation in shaping economic organizations and individual performance at work. The authors suggest three main propositions in their analysis:

- There exist preliminary phases in respect to innovation and creativity at least at a psychological level, that have not been adequately recognized;
- Innovation and creativity can be better understood also considering the role of some concept imported from psychology such as personal initiative and voice behavior;
- Leadership preferences, motivations and cultural differences among values can have a role in the understanding of creative and innovation among countries.

The main contribution of the authors consists in the creation of a nexus between psycho-social determinants at a country level and the creation of an innovation-friendly environment.

Tian, Deng, Zhang & Salmador (2018) analyze literature relative to the impact of culture on innovation. The authors consider a set of peer-reviewed article foe 37 years in the period 1980-2017. The results show the presence of two cluster of articles in studying the relationship among innovation, organizational culture, and national culture. Tian, Deng, Zhang & Salmador (2018) show the presence of a varieties of cultural factors that can promote or to restrict the role of innovation. The complex relationship between innovation and culture let the authors conclude that exist an idiosyncratic nexus between those variables. But the authors realize only a literature review and omit the role of empirical studies in shaping the relationship between innovation and culture. The presence of a nexus between innovation and culture can be useful for manager, that can implement in their organizations more innovation-friendly culture.

Rosenbusch, Brinckmann & Bausch (2011) afford the question of the innovation-performance in small and medium enterprises. The authors concentrate their attention on resource-scarce SMEs, to investigate if this kind of firm has some economic or financial benefit from innovation. The orientation towards innovation and the innovation activities can create value for SMEs. But innovation is not free for SMEs due to the presence of costs i.e., continuous investments, risks, and uncertainty. But even considering these costs there are relevant benefits for SMEs in investing in innovation such as customer loyalty, price premiums, innovative products, and competitive gains in market share. The authors show that innovation-performance in SMEs depends on the sequent elements: age of the firm, the type of innovation, cultural context.

Tolba & Mourad (2011) analyze the relationship among individuals, cultural factors, and innovation. The authors measure on one side individual factors as based on opinion leaders and on the other side cultural factors are synthetized by avoidance and individualism.

The results show that organizations that can promote either inventors either promoters of innovation can be considered as champions of innovation. On the other side, there are cultural factors that can sustain the effort of corporations and economic organizations to promote innovation i.e., individualism and uncertainty.

Aragón-Correa, García-Morales & Cordón-Pozo (2007) analyze the relationship between innovation and leadership. Organizational learning has a relevant role in creating the conditions for innovation. The authors find some elements that can promote innovation and firm-level that are: leadership style, individual feature, organizational learning. [18] use a dataset of 408 large firms. The results show that:

- Organizational learning has an impact on innovation that is stronger than CEO leadership;
- CEO leadership has a relevant influence on organizational learning and innovation;
- Innovation can promote firm-performance;
- Organization learning can generate deeper levels of innovation.

The relationship among organizational learning, leadership, innovation, and firm performance are relevant to create the conditions for the establishment of an innovation-friendly environment.

Khazanchi, Lewis & Boyer (2007) analyze the relevance of innovation as a tool for management. Managers that intend orient their organization towards innovation need to promote a complex set of organizational characteristics that are: flexibility, empowerment, control, and efficiency. Organizational culture is essential to promote innovation among corporations and SMEs. But the rationalization of the organizational culture remains a difficult task either for sociologists and social psychologists. The authors suggest that to implement high tech solution in the organizational structure of corporations is necessary to create a culture of the innovation and value added.

Morris, Avila & Allen (1993) analyze the role of individualism and collectivism in creating the condition for an innovation-friendly environment. The authors find that innovation grows in the case of a moderate relationship between the individualist and the collectivist orientation of the society while it declines either in connection with extreme individualism either as a consequence of deeper collectivism.

Gumusluoglu & Ilsev (2009) analyze the effect of transformational leadership on creativity and innovation either at an individual level either in an organizational perspective. The authors collect data from 163 R&D workers of 43 micro and SMEs Turkish ICT companies. Creativity and innovation growth with the increase of transformational leadership either at a individual level either in an organizational perspective. Employees can improve their creativity in the case of transformational leadership as a consequence of empowerment. Finally, transformational leadership can promote innovation at a firm level.

Grinstein (2008) affords the relationship between market orientation and innovation. Market orientation is considered in three elements that are: customer orientation, competitor orientation, interfunctional coordination. The author finds a positive relationship between market orientation and innovation at a firm level. The positive relationship between market orientation and innovation is strengthened in the case of competitive environment. Other elements that reinforce the positive relationship between market orientation and innovation are: large firms, service companies, countries with individualism and high power distance.

Kostis, Kafka & Petrakis (2008) afford the question of the relationship between cultural change and innovation. The authors analyze 34 countries in the period 1980-2010. Results show that there is a positive relationship between culture and innovation. The main drivers of the positive relationship between culture and innovation are: trust, control, work ethic and honesty. Obedience is negatively associated to innovation.

The Model

We estimate the sequent model:

$$\begin{aligned} \text{InnovationFriendlyEnvironment}_{it} &= a_1 + b_1(\text{BasicSchoolEntrepreneurialEducationAndTraining}) \\ &+ b_2(\text{GovernmentProcurementOfAdvancedTechnologyProducts})_{it} \\ &+ b_3(\text{EmploymentShareManufacturing})_{it} + b_4(\text{FinanceAndSupport})_{it} \\ &+ b_5(\text{HumanResources})_{it} \end{aligned}$$

Whit $i=36$ and $t=19$

Since:

- $\text{InnovationFriendlyEnvironment} = \text{BroadbandPenetrationAmongEnterprises} + \text{OpportunityDrivenEntrepreneurship};$
- $\text{FinanceAndSupport} = \text{R\&DExpenditureInThePublicSector} + \text{VentureCapitalExpenditures}$
- $\text{HumanResources} = \text{NewDoctorateGraduates} + \text{PopulationAged25} - 34\text{WithTertirayEducation} + \text{LifelongLearning}$

Then we have the extended form of the equation is:

$$\begin{aligned} &\text{BroadbandPenetrationAmongEnterprises} \\ &+ \text{OpportunityDrivenEntrepreneurship} \\ &= b_1(\text{BasicSchoolEntrepreneurialEducationAndTraining}) \\ &+ b_2(\text{GovernmentProcurementOfAdvancedTechnologyProducts})_{it} \\ &+ b_3(\text{EmploymentShareManufacturing})_{it} \\ &+ b_4(\text{R\&DExpenditureInThePublicSector})_{it} \\ &+ b_5(\text{VentureCapitalExpenditures})_{it} + b_6(\text{NewDoctorateGraduates})_{it} \\ &+ (\text{PopulationAged25} - 34\text{WithTertirayEducation})_{it} + (\text{LifelongLearning})_{it} \end{aligned}$$

Where

$$\begin{aligned} \text{FinanceAndSupport}_{it} &= \text{R\&DExpenditureInThePublicSector}_{it} \\ &+ \text{VentureCapitalExpenditures}_{it} > 0 \end{aligned}$$

And

$$\begin{aligned} \text{HumanResources}_{it} &= \text{NewDoctorateGraduates}_{it} + \text{PopulationAged25} \\ &- 34\text{WithTertirayEducation}_{it} + \text{LifelongLearning}_{it} > 0 \end{aligned}$$

Whit $i=36$ and $t=19$

	<i>Dynamic panel</i>		<i>Fixed Effects</i>		<i>Random Effects</i>		<i>Pooled OLS</i>		<i>WLS</i>	
	<i>Coefficient</i>	<i>p value</i>	<i>Coefficient</i>	<i>p value</i>	<i>Coefficient</i>	<i>p value</i>	<i>Coefficient</i>	<i>p value</i>	<i>Coefficient</i>	<i>p value</i>
<i>Const</i>	★4,25605	**	★ 0,3683		☆ 0,68568		★ 4,49289		★ 0,31925	
<i>A4</i>	☆0,401557	***	☆ 0,54	***	★ 0,53429	***	★ 0,49693	***	☆ 0,50118	***
<i>A22</i>	☆1,21692	***	★ 1,1052	***	★ 1,11453	***	☆ 1,14109	***	★ 1,16079	***
<i>A12</i>	☆0,552527	**	★ 1,3019	***	★ 1,26194	***	☆ 0,96921	***	★ 0,865	***
<i>A17</i>	★0,278096	**	☆ 0,4938	***	★ 0,48784	***	★ 0,44311	***	★ 0,3832	***
<i>A23</i>	☆0,664301	***	☆ 0,6134	***	☆ 0,61606	***	★ 0,62188	***	★ 0,68924	***
<i>A25(-1)</i>	★0,008616	0,89								

FIGURE 2
THE ESTIMATION OF THE INNOVATION-FRIENDLY ENVIRONMENT
SYNTHESIS OF THE MAIN RESULTS

We found that the “*Innovation-Friendly Environment*” is positively associated to:

- *Basic School Entrepreneurial Education and Training*: in countries in which the training in creating or managing SMEs is incorporated in primary and secondary schools there are greater probabilities to create an innovation-friendly environment. Education and the school system have an essential role in shaping the ability of a country to boost innovation especially in the private sector through SMEs and corporations.
- *Government Procurement of Advanced Technology Products*: is a measure of the ability of a government to promote innovation through public investments. The increasing in the investment of government in advanced technology products is positively associated to the creation of an innovation-friendly environment.
- *Employment Share Manufacturing*: is a measure of the percentage of employment in knowledge intense industries. If a country can develop a productive system based on knowledge intense sectors, then that country has greater probabilities to create an innovation-friendly environment.
- *Finance and Support*: is a measure of the financial investment in innovation either in the private and in the public sector. If a country can improve the finance-innovation nexus then that country has greater probabilities to promote an innovation-friendly environment.
- *Human Resources*: is a measure of the presence of a high skilled workforce. Education, especially tertiary education, can have a relevant role in shaping a positive innovation-friendly environment.

Variable		Definition
y	A25	Innovation Friendly-Environment Captures the environment in which enterprises operate and includes two indicators - Broadband penetration among enterprises and Opportunity-driven entrepreneurship - measuring the degree to which individuals pursue entrepreneurial activities as they see new opportunities, for example resulting from innovation.
x₁	A4	Basic School Entrepreneurial Education and Training The indicator measures the extent to which training in creating or managing SMEs is incorporated within the education and training system at primary and secondary school levels.

x_2	A22	Government Procurement of Advanced Technology Products	The indicator measures the extent to which government procurement decisions in a country foster technological innovation by providing the average response to the following question: "Government purchase decisions for the procurement of advanced technology products are (1 = based solely on price, 7 = based on technical performance and innovativeness)".
x_3	A12	Employment Share Manufacturing	Employment in technology and knowledge-intensive sectors at the national level, by type of occupation.
x_4	A17	Finance and Support	Includes two indicators and measures the availability of finance for innovation projects by Venture capital expenditures, and the support of governments for research and innovation activities by R&D expenditures in universities and government research organizations.
x_5	A23	Human Resources	Includes three indicators and measures the availability of a high-skilled and educated workforce. Human resources captures New doctorate graduates, Population aged 25-34 with completed tertiary education, and Population aged 25-64 involved in education and training.

Source: European Innovation Scoreboard

CONCLUSION

In this article we investigate the determinants of the innovation-friendly environment in Europe in the period 2000-2019. We use data from the European Innovation Scoreboard of the European Commission for 36 countries. Data are analyzed using dynamic panel data at 1 stage, panel data with fixed effects, panel data with random effects, pooled OLS, and WLS. The determinant of the innovation-friendly environment are not only economic or financial in a strict sense. There are also sociological, cultural, political and anthropological factors that can explain why a certain country is more oriented to innovation in respect to other. To analyze these cultural and sociological factors that have an impact on innovation, either at a country level either in an organizational perspective, we use refers to the Hofstede's Index that is able to capture six cultural dimensions able to describe the cultural environment. We discuss literature that connect the Hofstede's Index to innovation. Finally, we present our econometric models. Our results show that the "Innovation-Friendly Environment" is positively associated to "Basic-school entrepreneurial education and training", "Government procurement of advanced technology products", "Employment share Manufacturing", "Finance and support", "Human resources".

Recommendation Policies

If politicians are interested in promoting an innovation-friendly environment, they should not only invest directly on innovation. But at the contrary they must invest in the creation of a cultural, social, institutional environment able to promote innovation. A relevant aspect of the innovation-friendly political economies is in the empowering of human resources, in the promoting education and learning among the population and in creating the conditions for a deeper cooperation between public and private organizations in the sense of innovation.

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